

Vitex agnus-castus L.

lilac chastetree

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Other common names. chaste-tree, monks'-peppertree, hemptree (Bailey 1949).

Growth habit, occurrence, and use. The genus *Vitex* occurs in both hemispheres in the tropical and subtropical zones. About 380 taxa have been described (Bredenkamp and Botha 1993). Lilac chastetree, a deciduous, strongly aromatic shrub or small tree, is one of the few species in the genus that is native to the temperate zones, but it is not native to North America (Bailey 1949). It has, however, naturalized in much of the southeastern United States.

In Washington on the west side of the Cascades, it attains a height of 1.8 m, increasing in more southerly latitudes to a height of 7.7 m in the low desert of southern California (Williamson 1967). Multiple stems support a broad spreading form, but shade trees with a single stem can be developed by pruning (Williamson 1967).

In the eastern United States, the species is hardy as far north as New York (USDA Hardiness Zone 6), but marginally so; it performs better further south, in USDA Hardiness Zones 8–9 (LHBH 1076; Dirr 1990; Moldenke 1968). This species is less hardy than negundo chastetree (*Vitex negundo* L.), which is also planted as an ornamental (Dirr 1990) and has been cultivated as an ornamental in southern Europe, the Middle East, India, and Brazil (Moldenke 1968). Lilac chastetree was introduced as an ornamental into the United States in 1570 (Rehder 1940). The species has value in shelterbelt plantings (Engstrom and Stoeckeler 1941).

Since the days of Dioscorides in the first century AD, seeds of this species have been notorious for their ability to subdue sexual urges in men, hence the name "chastetree" (Moldenke 1968; Polunin and Huxley 1966). This property was recognized as being useful to celibates and this in turn led to the name "monks'-peppertree." However, these properties are questioned today. There is evidence that phytomedicines from the chastetree are useful in the treatment of menstrual disorders in women (Bohnert and Hahn 1990). Because of the aromatic pungency of fresh seeds, however, some people have considered the seeds as having aphrodisiac properties.

Other species (for example, negundo chastetree) are used in tropical and subtropical regions for biomass and fuelwood production because of their rapid growth, ability to coppice, and tolerance of a wide range of site conditions (Verma and Misra 1989).

Varieties. Typical plants of the species have lavender flowers, but several other varieties have been cultivated in the United States (Rehder 1940; Dirr 1990). White chastetree, var. *alba* West., has white flowers. Hardy lilac chastetree, var. *latifolia* (Mill.) Loud., is characterized by broader leaflets and greater cold-hardiness. In addition, a form with pink flowers, *f. rosea* Rehder, has been propagated (Dirr 1990; Rehder 1940).

Flowering and fruiting. The fragrant flowers occur in dense spikes about 2.8 cm long; they bloom during the late summer and autumn in the United States (Bailey 1949). In Europe, flowering occurs from June to September (Moldenke 1968; Polunin and Huxley 1966). According to Dirr (1990), the plants will continue to flower as long as new growth is occurring; removing old flowers (deadheading) can prolong flowering.

The pungent fruits are small drupes about 3 to 4 mm in diameter that ripen in late summer and fall (Schopmeyer 1974). Good seedcrops occur almost every year (Engstrom and Stoeckeler 1941). Each drupe contains a rounded 4-celled stone about 3 mm long that is brownish to purple-brown and frequently partially covered with a lighter colored membranous cap. Each stone may contain from 1 to 4 seeds (figure 1) (Schopmeyer 1974).

Collection of fruits; extraction and storage of seeds. The fruits may be gathered in late summer or early fall by picking them from the shrubs by hand or by flailing or stripping them onto canvas or plastic sheets. Seeds can be removed by running the fruits dry through a macerator and fanning to remove impurities (Engstrom and Stoeckeler 1941). Seed yield per fruit weight is about 34 kg of cleaned seed/45 kg of ripe fruit ((75 lb/100 lb). Number of cleaned seeds varied from 74,800 to 130,000/kg (34,000 to 59,000/lb) in 4 samples (Schopmeyer 1974). Purity in 2 samples was 80%, and average soundness in 4 samples was 55%. In one test, seeds stored in moist sand and peat at 5 EC or 1 year showed no loss of viability (Schopmeyer 1974).

Germination. Seeds germinate readily without pretreatment (Dirr and Heuser 1987). However, stored seeds may exhibit dormancy that can be overcome by stratification in moist sand and peat for 90 days at about 5 EC. Germination tests should be made in sand flats for 40 days at 21 EC (night) to 30 EC (day) (Schopmeyer 1974). Germinative energy of stratified seeds was 18 to 60% in 10 to 22 days (3 tests). Germinative capacity of untreated seeds was 0.4% in 71 days (1 test); with stratified seeds, 20 to 72% (3 tests) (Schopmeyer 1974).

In another test, fresh seeds collected in January in southern California were sown without treatment in February in a greenhouse in Iowa. Germination was completed (percentage not stated) by April 20 when seedlings were 2 inches tall (King 1932). Germination is epigeal (King 1932) (figure 2).

Nursery practice. Stratified seeds of lilac chastetree should be sown in the spring and covered with 6 mm (1/4 in) of soil. On the average, about 16% of the viable seeds sown produce usable 2+0 seedlings (Engstrom and Stoeckeler 1941). Lilac chastetree can be readily propagated by greenwood cuttings collected before flowering, by hardwood cuttings in the fall, and layering (LHBH 1976; Dirr and Heuser 1987).

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Figure 1— *Vitex agnus-castus*, lilac chastetree: fruit (**A**), H 10; Transverse section through 2 seeds within a fruit (**B**), H 10; cleaned seed (**C**), H 12; longitudinal section through a seed, with embryo taking up entire seed cavity (**D**), H 10.

Figure 2— *Vitex agnus-castus*, lilac chastetree: seedling showing cotyledons and first leaves (drawing by King 1932).